

Current Management – Research Needs 2009

Blue – indicates study currently (or past) funded

Species specific research needs

Topic	Further Description
Birds of prey	- Habitat and prey preferences of migratory birds of prey
Carp Bullhead	- Impacts of carp &/or bullhead management on species of greatest conservation need - Management techniques for controlling carp in shallow lakes
Eels Sturgeon	- Eel ladders: Development of eel & sturgeon passage structures for Mississippi Lock & Dam structures
Fish	- Reproductive needs of paddlefish, grass pickerel, Topeka shiners, &/or suite of SGCN fish associated with Missouri River tributaries
Ornate box turtle	- Population assessment in the Loess Hills
Plains pocket mouse	- Population assessment and habitat use in the Loess Hills
Prairie butterflies	- Habitat components and obligate plant hosts for selected declining species - Why are they declining (especially skippers)?
Inventory high priority butterfly species	- Arogos skipper, Common ringlet, Baltimore checkerspot, Ozark Baltimore Checkerspot, Olympia marble, Silvery blue, Leonard's skipper, Dusted skipper, Ottoe skipper, Purplish copper, Poweshiek skipper, Mulberry wing, Byssus skipper - Also survey by region/habitat: e.g. Loess Hills, wetlands, forests
Ottoe skipper	- Why is this species not colonizing new sites?
Prairie chickens	- Impacts of trees on lek predations (e.g. how many? What distance) - Minimum area habitat size requirements for a self-sustaining population
Rare fish	- Habitat and water quality requirements of rare fish on the Lower Cedar River (&/or of the suite of SGCN fish associated with Missouri River tributaries)
Reptiles & amphibians	- Habitat status and use of all Iowa herps with emphasis on state and federal T & E species - Impacts of public land management on herps (especially wetland management) - Status and distribution of: Mudpuppy, Wood Turtle; Speckled Kingsnake; Worm Snake
Ruffed grouse	- Habitat suitability and use in NE Iowa - Use of aspen and other early successional habitat
Snakes	- Can created hibernaculas help reverse snake population declines?
West Nile virus	- Occurrence, frequency, and impacts on birds
Quail	- "dirty fields" – comparing chemical vs. organic/no chemical corn impacts on quail numbers
Cerulean warblers	- Does Iowa have suitable breeding habitat to support a population of CEWA?

Bats	<ul style="list-style-type: none"> - Natural history of bats in Iowa - Impacts of windfarms
Shorebirds	<ul style="list-style-type: none"> - Impact of current wetland management strategies on shorebirds (in relation to duck habitat management)
Mussels	<ul style="list-style-type: none"> - Is recruitment occurring in areas of known high species diversity? - Is recruitment occurring in areas that have exhibited drastic declines? - Genetic variation in populations. - Are mussels in Iowa streams using the same host fish as elsewhere? - Do lowhead dams inhibit movement of host fishes (leading to declines in mussel reproduction? - Is mussel recruitment tied to fish recruitment?
Land snails	<ul style="list-style-type: none"> - Develop list of terrestrial snails presently occurring within Iowa
Bird SGCN	<ul style="list-style-type: none"> - More information is needed on grassland vs shrubland needs of SGCN birds in SE Iowa - More information is needed on birds within the Loess Hills region
Mammal SGCN	<ul style="list-style-type: none"> - More information is needed on the status and distribution of: White-tailed Jackrabbit; Franklin's Ground Squirrel; Pocket Gophers; Least Shrew; Indiana Bat; Bog Lemming; Prairie Vole; Gray Fox

Land and water management research needs

Topic	Further Description
CRP	<ul style="list-style-type: none"> - Do CRP seedings and other management techniques really affect wildlife? Quail & songbirds - Relative impacts of CRP on water quality improvement? Benefits to SGCN associated with trout streams, other systems?
Goat Prairie management	<ul style="list-style-type: none"> - Impacts of tree and shrub encroachment on goat prairies and sensitive species (e.g. timber rattlesnake) - Value of these sites to butterflies & other wildlife
Effect of prescribed fire	<ul style="list-style-type: none"> - Exclusion & re-introduction of fire on native grasslands - Exclusion & reintroduction of fire on woodlands, savannas, and forests - Effect of fire on butterflies - Management guidelines for fire use and SGCN
Effect of public land crop and grazing rotation	<ul style="list-style-type: none"> - Pre- and post-management study to address impacts on SGCN (birds & insects) - Effects of mowing and grazing on butterflies
Farming practices	<ul style="list-style-type: none"> - Impacts of different farming practices (e.g. organic vs. chemical fertilizer) on songbird, herptile, &/or fish populations
Land acquisition	<ul style="list-style-type: none"> - How large must core tracts be to conserve species with minimum viable population sizes? - Comparison of large core tracts vs. targeted corridors for aquatic SGCN - Pre- and post-effects of land management techniques
Restoration and new habitat projects	<ul style="list-style-type: none"> - Identifying faunal differences between native and restored sites (prairie, wetland, savanna) - Feasibility of introducing new species - Sources for amphibian and insect colonizers for new sites - Effectiveness of nitrate removal in restored wetlands - Impacts of hydrologic regime restoration (i.e. is it hydrologic regime or habitat restoration that impacts SGCN?) - Coldwater stream fish species restoration - Warm water stream aquatic species restoration
Timber harvest	<ul style="list-style-type: none"> - Impacts of timber harvest to create early successional habitat and maintain prairie & Savanna (pre-and post- management studies – neotropical migrants and ruffed grouse, etc.) - Are Iowa forests sources or sinks for interior forest nesting birds like the cerulean warbler? - Determining a suitable deer density that balances public demand with impacts on forest birds and other taxa
Wind turbines	<ul style="list-style-type: none"> - Effects on nesting success of breeding birds? - How can turbines be modified so as to not cause bat mortality?
Urbanization (& habitat changes from historic conditions)	<ul style="list-style-type: none"> - Impacts on SGCN - Are any SGCN benefiting from urbanization? - How do SGCN relate to increases with red foxes in urban areas (& decline of foxes in rural/wild areas)
Water quality	<ul style="list-style-type: none"> - Impacts of water quality on dragonflies & other SGCN - Are common species declining due to water quality issues (e.g. muskrats, fish)? - Benefits from wetland restoration, hydrologic regime restoration, habitat programs (e.g. CRP) & management actions

Area specific research needs

Topic	Further Description
GIS and landscape modeling	<ul style="list-style-type: none"> - E.g. – continued development of the Grassland Bird Conservation area model to identify geographic focus areas for habitat protection, restoration, and management - Comparison of corridors vs. core tracts for aquatic SGCN & water quality
Headwater streams	<ul style="list-style-type: none"> - Community composition, impacts of agricultural runoff, &/or hydrologic regime impacts
Identifying critical habitat components	<ul style="list-style-type: none"> - Landscape factors affecting species of greatest conservation need (Structural features, landscape configurations, and amounts of habitat)
Investigative interactions	<ul style="list-style-type: none"> - What is the relative importance of disease, predation, nest parasitism, introduced species, land use, &/or abiotic factors (e.g. climate change)?
Sinkholes and Algific Talus slopes	<ul style="list-style-type: none"> - ATS sites with rare and endangered species need to have the sinkholes mapped - Update status of land snails restricted to these areas.
Invasive species & impacts on wetland wildlife populations and production	<ul style="list-style-type: none"> - Effects of water level management vs. herbicide & manual removal of canary grass - Effects of water level management vs. pesticide & manual removal of purple loosestrife - Effects of water level management vs. pesticide & manual removal of black willows - Effects of water level management vs. pesticide & manual removal of rough fish
Shallow lakes program	<ul style="list-style-type: none"> - Benefits to SGCN – shorebirds, dragonflies, amphibians, reptiles, etc. - Short-term impacts to SGCN (e.g. – Blanding's turtles)
Lead impacts	<ul style="list-style-type: none"> - Impacts of lead on SGCN

While all of the above needs (& doubtless others of which we have not listed) are important, special attention may be paid to proposals concerning windfarms; management for any major habitat type and how that management impacts/influences SGCN; impacts of lead on SGCN; surveys of mussels in lakes/impoundments; or surveys of SGCN fish in lakes and impoundments.